

We Claim:

1. A filter element support and valve or mounting a filter element on an end plate within a filter cartridge, comprising:

a valve body including portions adapted to engage both the filter element and the end plate;

a bypass valve portion unitary with valve body;

an anti-drainback portion unitary with the valve body, and

a clean side valve, unitary with valve body for preventing pre-filling of the filter cartridge with fluid.

2. The filter element support and valve of claim 1 wherein the filter element is an annular filter element with a hollow core and wherein the valve body is comprised of a unitary body having a first annular section and an aligned second annular section both aligned with the hollow core, the valve body further having a radially aligned projecting flange portion extending from the annular sections, the first annular section providing a bypass valve and the radially extending flange portion providing an anti-drainback valve.

3. The filter element support of claim 2 wherein the clean side valve extends transversely across the annular sections and has a one-way valve thereon which opens only to let fluid out of the hollow core of the filter element.

4. The filter element support of claim 3 wherein clean side valve comprises a plate which extends across the annular sections with the one-way valve fixed on the plate.

5. The filter element support of claim 4 wherein the plate and valve member are unitary.

6. The filter element support of claim 4 wherein the one-way valve is a purse valve which opens away from the hollow core.

7. The filter element support of claim 6 wherein the purse valve comprises a pair of lips which intersect along a line, the lips projecting away from the hollow core wherein fluid pressure in the hollow core separates the lips along the line to open the one valve and wherein fluid pressure outside of the filter element applied against the lips keeps the lips in engagement along the line to close the one-way valve.

8. A combination valve support and sealing element for use in a filter cartridge wherein the filter cartridge includes annular filter element having a hollow core and an end cap and is disposed in a housing closed by an end plate having central opening surrounded by an array of radial openings spaced a fixed radial distance from one another, the combination valve support and sealing element comprising:

a unitary body of flexible resilient material;

the unitary body having a central opening of a constant diameter, which central opening is coaxial with the central opening of the end plate, the diameter of the central opening being greater than the central opening and less than radial distances between the radial openings;

the unitary body having a first annular section which projects into the hollow core of the filter element for sealing with the filter element and a second section coextensive with the first section, the first annular section having a annular sealing ring thereon for sealing with the end cap and, the second section sealing only with the end plate around the central opening through the end plate;

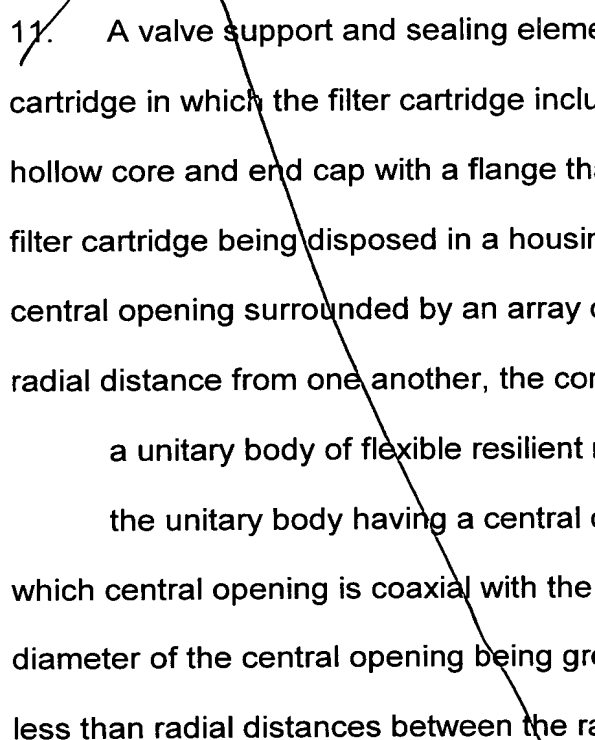
the unitary body having a radially projecting flange which is axially spaced from the second section and projects radially beyond the spaced radial openings in the end plate for sealing around the spaced radial openings to provide an anti-drainback valve;

a plurality of radially extending ribs on the radially extending flange, the radially extending ribs having rib portions projecting axially on the first annular section of the unitary body and being axially spaced from the annular sealing ring on the first section of the body member, which annular sealing ring deflects inwardly when the filter element is clogged in order to provide a bypass for fluid when fluid is unable to flow through the filter element, and

a clean side valve unitary with the valve body for preventing pre-filling of the cartridge.

9. The combination valve support and sealing element of claim 8 wherein the clean side valve is a purse valve supported on a plate which spans the central opening of the unitary body, the purse valve being comprised of a pair of lips which are normally closed.

10. The combination valve support and sealing element of claim 8 wherein the axially extending rib portions engage an end cap on the filter element to support the filter element and provide axially extending gaps therebetween and wherein oil applies pressure to the sealing ring, which pressure causes to the sealing ring to deflect inwardly when a preselected pressure indicative of a clogged filter element is reached.

11. A valve support and sealing element in combination with a filter cartridge in which the filter cartridge includes annular filter element having a hollow core and end cap with a flange that extends into the hollow core, the filter cartridge being disposed in a housing closed by an end plate having central opening surrounded by an array of radial openings spaced a fixed radial distance from one another, the combination comprising:  
a unitary body of flexible resilient material;  
the unitary body having a central opening of a constant diameter, which central opening is coaxial with the central opening of the end plate, the diameter of the central opening being greater than the central opening and less than radial distances between the radial openings;

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the unitary body having a first annular section which projects into the hollow core of the filter element for sealing with the filter element and a second section coextensive with the first section, the first annular section having a annular sealing ring thereon for sealing with the flange of the end cap and, the second section sealing only with the end plate around the central opening through the end plate;

the unitary body having a radially projecting flange which is axially spaced from the second section and projects radially beyond the spaced radial openings in the end plate for sealing around the spaced radial openings to provide an anti-drainback valve,

a plurality of radially extending ribs on the radially extending flange, the radially extending ribs having rib portions projecting axially on the first annular section of the unitary body and being axially spaced from the annular sealing ring on the first section of the body member, which annular sealing ring deflects inwardly when the filter element is clogged in order to provide a bypass for oil when oil is unable to flow through the filter element, and

a clean side valve unitary with the valve body for preventing pre-filling of the cartridge.

12. The combination valve support and sealing element of claim 11 wherein the clean side valve is a purse valve supported on a plate which spans the central opening of the unitary body, the purse valve being comprised of a pair of lips which are normally closed.

13. The combination of claim 12 wherein axially extending rib portions engage the end cap on the filter element to support the filter element and provide axially extending gaps therebetween and wherein oil applies pressure to the sealing ring, which pressure causes to the sealing ring to deflect inwardly away from the end cap flange when a preselected pressure indicative of a clogged filter element is reached.

14. The combination of claim 12 wherein the flexible resilient material of the unitary body is rubber.

15. The combination of claim 7 wherein the flexible resilient material of the unitary body is rubber.